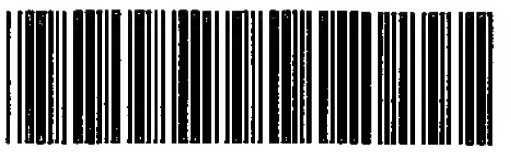

RAW SEQUENCE LISTING DATE: 05/08/2003
PATENT APPLICATION: **US/09/780,438C** TIME: 14:42:57

Input Set : **A:\EP.txt**
Output Set: **N:\CRF4\05082003\I780438C.raw**

3 <110> APPLICANT: Qi, Xiaoyang
5 <120> TITLE OF INVENTION: Fusogenic Properties of Saposin C and Related Proteins and Polypeptides
6 for Application to Transmembrane Drug Delivery Systems
8 <130> FILE REFERENCE: 10872/0474352
10 <140> CURRENT APPLICATION NUMBER: US 09/780,438C
11 <141> CURRENT FILING DATE: 2000-02-11
13 <150> PRIOR APPLICATION NUMBER: US 60/181,754
14 <151> PRIOR FILING DATE: 2000-02-11
16 <160> NUMBER OF SEQ ID NOS: 6
18 <170> SOFTWARE: PatentIn version 3.1
20 <210> SEQ ID NO: 1
21 <211> LENGTH: 40
22 <212> TYPE: PRT
23 <213> ORGANISM: Homo sapiens
25 <400> SEQUENCE: 1

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1               5                  10                  15
Lys Leu Ile Asp Asn Asn Lys Thr Glu Lys Glu Ile Leu Asp Ala Phe
            20                  25                  30
Asp Lys Met Cys Ser Lys Leu Pro
        35                  40
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39 <210> SEQ ID NO: 2
40 <211> LENGTH: 38
41 <212> TYPE: PRT
42 <213> ORGANISM: Homo sapiens
44 <400> SEQUENCE: 2

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1               5                  10                  15
Ile Asp Asn Asn Lys Thr Glu Lys Glu Ile Leu Asp Ala Phe Asp Lys
            20                  25                  30
Met Cys Ser Lys Leu Pro
        35
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58 <210> SEQ ID NO: 3
59 <211> LENGTH: 38
60 <212> TYPE: PRT
61 <213> ORGANISM: Homo sapiens
63 <220> FEATURE:
64 <221> NAME/KEY: MISC_FEATURE
65 <222> LOCATION: (1)..(1)
66 <223> OTHER INFORMATION: Where the amino acid located at 1 is a hydrophobic amino acids, i
67 ncluding Val, Leu, Ile, Met, Pro, Phe, and Ala
70 <220> FEATURE:

71 <221> NAME/KEY: MISC_FEATURE

RAW SEQUENCE LISTING DATE: 05/08/2003
PATENT APPLICATION: US/09/780,438C TIME: 14:42:57

Input Set : A:\EP.txt
Output Set: N:\CRF4\05082003\I780438C.raw

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     72 <222> LOCATION: (2)..(2)
     73 <223> OTHER INFORMATION: Where the amino acid located at 2 is an uncharged polar amino
aci
     74       d, including Thr, Ser, Tyr, Gly, Gln, and Asn
     77 <220> FEATURE:
     78 <221> NAME/KEY: MISC_FEATURE
     79 <222> LOCATION: (5)..(5)
     80 <223> OTHER INFORMATION: Where the amino acid located at 5 is a hydrophobic amino
acid, in
     81       cluding Val, Leu, Ile, Met, Pro, Phe, and Ala
     84 <220> FEATURE:
     85 <221> NAME/KEY: MISC_FEATURE
     86 <222> LOCATION: (8)..(10)
     87 <223> OTHER INFORMATION: Where the amino acids located at 8-10 are hydrophobic amino
acids
     88       , including Val, Leu, Ile, Met, Pro, Phe, and Ala
     91 <220> FEATURE:
     92 <221> NAME/KEY: MISC_FEATURE
     93 <222> LOCATION: (13)..(13)
     94 <223> OTHER INFORMATION: Where the amino acid located at 13 is a hydrophobic amino
acid, i
     95       ncluding Val, Leu, Ile, Met, Pro, Phe, and Ala
     98 <220> FEATURE:
     99 <221> NAME/KEY: MISC_FEATURE
    100 <222> LOCATION: (14)..(14)
    101 <223> OTHER INFORMATION: Where the amino acid located at 14 is an uncharged polar
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    102       id, including Thr, Ser, Tyr, Gly, Gln, and Asn
    105 <220> FEATURE:
    106 <221> NAME/KEY: MISC_FEATURE
    107 <222> LOCATION: (16)..(17)
    108 <223> OTHER INFORMATION: Where the amino acids located at 16 and 17 are hydrophobic
amino
    109       acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
    112 <220> FEATURE:
    113 <221> NAME/KEY: MISC_FEATURE
    114 <222> LOCATION: (22)..(22)
    115 <223> OTHER INFORMATION: Where the amino acid located at 22 is an uncharged polar
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    116       id, including Thr, Ser, Tyr, Gly, Gln, and Asn
    119 <220> FEATURE:
    120 <221> NAME/KEY: MISC_FEATURE
    121 <222> LOCATION: (26)..(27)
    122 <223> OTHER INFORMATION: Where the amino acids located at 26 and 27 are hydrophobic
amino
    123       acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
    126 <220> FEATURE:
    127 <221> NAME/KEY: MISC_FEATURE
    128 <222> LOCATION: (29)..(30)
    129 <223> OTHER INFORMATION: Where the amino acids located at 29 and 30 are hydrophobic
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    130       acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
    133 <220> FEATURE:
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134 <221> NAME/KEY: MISC_FEATURE
135 <222> LOCATION: (33)..(33)
136 <223> OTHER INFORMATION: Where the amino acid located at 33 is a hydrophobic amino acid, i
137 ncluding Val, Leu, Ile, Met, Pro, Phe, and Ala
140 <220> FEATURE:

RAW SEQUENCE LISTING DATE: 05/08/2003
PATENT APPLICATION: **US/09/780,438C** TIME: 14:42:57

Input Set : **A:\EP.txt**
Output Set: **N:\CRF4\05082003\I780438C.raw**

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     142 <222> LOCATION: (35)..(35)
     143 <223> OTHER INFORMATION: Where the amino acid located at 35 is an uncharged polar
amino ac
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     147 <220> FEATURE:
     148 <221> NAME/KEY: MISC_FEATURE
     149 <222> LOCATION: (37)..(38)
     150 <223> OTHER INFORMATION: Where the amino acids located at 37 and 38 are hydrophobic
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     154 <400> SEQUENCE: 3
W--> 156 Xaa Xaa Cys Glu Xaa Cys Glu Xaa Xaa Xaa Lys Glu Xaa Xaa Lys Xaa
     157 1               5                   10                  15
     160 Xaa Asp Asn Asn Lys Xaa Glu Lys Glu Xaa Xaa Asp Xaa Xaa Asp Lys
     161             20                  25                  30
     164 Xaa Cys Xaa Lys Xaa Xaa
     165         35
     168 <210> SEQ ID NO: 4
     169 <211> LENGTH: 39
     170 <212> TYPE: PRT
     171 <213> ORGANISM: Homo sapiens
     173 <220> FEATURE:
     174 <221> NAME/KEY: MISC_FEATURE
     175 <222> LOCATION: (1)..(2)
     176 <223> OTHER INFORMATION: Where the amino acids located at 1 and 2 are hydrophobic
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     177       ids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
     180 <220> FEATURE:
     181 <221> NAME/KEY: MISC_FEATURE
     182 <222> LOCATION: (3)..(3)
     183 <223> OTHER INFORMATION: Where the amino acid located at 3 is an uncharged polar
amino aci
     184       d, including Thr, Ser, Tyr, Gly, Gln, and Asn
     187 <220> FEATURE:
     188 <221> NAME/KEY: MISC_FEATURE
     189 <222> LOCATION: (6)..(6)
     190 <223> OTHER INFORMATION: Where the amino acid located at 6 is a hydrophobic amino
acid, in
     191       cluding Val, Leu, Ile, Met, Pro, Phe, and Ala
     194 <220> FEATURE:
     195 <221> NAME/KEY: MISC_FEATURE
     196 <222> LOCATION: (9)..(11)
     197 <223> OTHER INFORMATION: Where the amino acids located at 9-11 are hydrophobic amino
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     198       , including Val, Leu, Ile, Met, Pro, Phe, and Ala
     201 <220> FEATURE:
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     203 <222> LOCATION: (14)..(14)
     204 <223> OTHER INFORMATION: Where the amino acid located at 14 is a hydrophobic amino
acid, i
     205       ncluding Val, Leu, Ile, Met, Pro, Phe, and Ala
     208 <220> FEATURE:
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209 <221> NAME/KEY: MISC_FEATURE
210 <222> LOCATION: (15)..(15)
211 <223> OTHER INFORMATION: Where the amino acid located at 15 is an uncharged polar amino ac

RAW SEQUENCE LISTING DATE: 05/08/2003
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Input Set : A:\EP.txt
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     212       id, including Thr, Ser, Tyr, Gly, Gln, and Asn
     215 <220> FEATURE:
     216 <221> NAME/KEY: MISC_FEATURE
     217 <222> LOCATION: (17)..(18)
     218 <223> OTHER INFORMATION: Where the amino acids located at 17 and 18 are hydrophobic
amino
     219       acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
     222 <220> FEATURE:
     223 <221> NAME/KEY: MISC_FEATURE
     224 <222> LOCATION: (23)..(23)
     225 <223> OTHER INFORMATION: Where the amino acid located 23 is an uncharged polar amino
acid,
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     231 <222> LOCATION: (27)..(28)
     232 <223> OTHER INFORMATION: Where the amino acids located at 27 and 28 are hydrophobic
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     237 <221> NAME/KEY: MISC_FEATURE
     238 <222> LOCATION: (30)..(31)
     239 <223> OTHER INFORMATION: Where the amino acids located at 30 and 31 are hydrophobic
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     245 <222> LOCATION: (34)..(34)
     246 <223> OTHER INFORMATION: Where the amino acid located at 34 is a hydrophobic amino
acid, i
     247       ncluding Val, Leu, Ile, Met, Pro, Phe, and Ala
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     253 <223> OTHER INFORMATION: Where the amino acid located at 36 is an uncharged polar
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     257 <220> FEATURE:
     258 <221> NAME/KEY: MISC_FEATURE
     259 <222> LOCATION: (38)..(39)
     260 <223> OTHER INFORMATION: Where the amino acids located at 38 and 39 are hydrophobic
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     267 1               5                   10                  15
     270 Xaa Xaa Asp Asn Asn Lys Xaa Glu Lys Glu Xaa Xaa Asp Xaa Xaa Asp
     271             20                  25                  30
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     278 <210> SEQ ID NO: 5
     279 <211> LENGTH: 38
     280 <212> TYPE: PRT
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281 <213> ORGANISM: Homo sapiens

283 <220> FEATURE:

284 <221> NAME/KEY: MISC_FEATURE

RAW SEQUENCE LISTING DATE: 05/08/2003
PATENT APPLICATION: US/09/780,438C TIME: 14:42:57

Input Set : A:\EP.txt
Output Set: N:\CRF4\05082003\I780438C.raw

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     285 <222> LOCATION: (1)..(1)
     286 <223> OTHER INFORMATION: Where the amino acid located at 1 is a hydrophobic amino
acid, in
     287       cluding Val, Leu, Ile, Met, Pro, Phe, and Ala
     290 <220> FEATURE:
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     292 <222> LOCATION: (2)..(2)
     293 <223> OTHER INFORMATION: Where the amino acid located at 2 is an uncharged polar
amino aci
     294       d, including Thr, Ser, Tyr, Gly, Gln, and Asn
     297 <220> FEATURE:
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     299 <222> LOCATION: (5)..(5)
     300 <223> OTHER INFORMATION: Where the amino acid located at 5 is a hydrophobic amino
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     301       cluding Val, Leu, Ile, Met, Pro, Phe, and Ala
     304 <220> FEATURE:
     305 <221> NAME/KEY: MISC_FEATURE
     306 <222> LOCATION: (8)..(10)
     307 <223> OTHER INFORMATION: Where the amino acids located at 8-10 are hydrophobic amino
acids
     308       , including Val, Leu, Ile, Met, Pro, Phe, and Ala
     311 <220> FEATURE:
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     313 <222> LOCATION: (13)..(13)
     314 <223> OTHER INFORMATION: Where the amino acid located at 13 is a hydrophobic amino
acid, i
     315       ncluding Val, Leu, Ile, Met, Pro, Phe, and Ala
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     320 <222> LOCATION: (14)..(14)
     321 <223> OTHER INFORMATION: Where the amino acid located at 14 is an uncharged polar
amino ac
     322       id, including Thr, Ser, Tyr, Gly, Gln, and Asn
     325 <220> FEATURE:
     326 <221> NAME/KEY: MISC_FEATURE
     327 <222> LOCATION: (16)..(17)
     328 <223> OTHER INFORMATION: Where the amino acids located at 16 and 17 are hydrophobic
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     329       acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
     332 <220> FEATURE:
     333 <221> NAME/KEY: MISC_FEATURE
     334 <222> LOCATION: (22)..(22)
     335 <223> OTHER INFORMATION: Where the amino acid located at 22 is an uncharged polar
amino ac
     336       id, including Thr, Ser, Tyr, Gly, Gln, and Asn
     339 <220> FEATURE:
     340 <221> NAME/KEY: MISC_FEATURE
     341 <222> LOCATION: (26)..(27)
     342 <223> OTHER INFORMATION: Where the amino acids located at 26 and 27 are hydrophobic
amino
     343       acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
     346 <220> FEATURE:
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347 <221> NAME/KEY: MISC_FEATURE
348 <222> LOCATION: (29)..(30)
349 <223> OTHER INFORMATION: Where the amino acids located at 29 and 30 are hydrophobic amino
350 acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
353 <220> FEATURE:

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 05/08/2003
PATENT APPLICATION: US/09/780,438C TIME: 14:42:58

Input Set : A:\EP.txt
Output Set: N:\CRF4\05082003\I780438C.raw

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:3; Xaa Pos. 1,2,5,8,9,10,13,14,16,17,22,26,27,29,30,33,35,37,38
Seq#:4; Xaa Pos. 1,2,3,6,9,10,11,14,15,17,18,23,27,28,30,31,34,36,38,39
Seq#:5; Xaa Pos. 1,2,5,8,9,10,13,14,16,17,22,26,27,29,30,33,35,37,38
Seq#:6; Xaa Pos. 1,2,5,8,9,10,13,14,16,17,22,26,27,29,30,33,35,37,38

VERIFICATION SUMMARY DATE: 05/08/2003
PATENT APPLICATION: **US/09/780,438C** TIME: 14:42:58

Input Set : **A:\EP.txt**
Output Set: **N:\CRF4\05082003\I780438C.raw**

L:156 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0
M:341 Repeated in SeqNo=3
L:266 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0
M:341 Repeated in SeqNo=4
L:376 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0
M:341 Repeated in SeqNo=5
L:486 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0
M:341 Repeated in SeqNo=6